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EXAMINER	
ZHEN, LI B	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/925,937	MURALIDHAR ET AL.	
	Examiner	Art Unit	
	Li B. Zhen	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-10,18 and 21-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-10,18 and 21-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 2, 4 – 10, 18 and 21 – 32 are pending in the application.

Response to Arguments

2. Applicant's arguments filed 09/14/2007 have been fully considered but they are not persuasive. In response to the Non-Final Office Action dated 06/04/2007, applicant argues:

(1) The selecting of the most updated configuration file for a particular device is different than the copying of configuration properties of one device to create an object for another device. The disclosure by Myer of generating an interface object instance when a configuration file is loaded or upon startup is unrelated to the cloning of device properties [p. 9, lines 5 – 13];

(2) The modification of a generic object is clearly different than the copying of a first I/O device object for a first I/O device to generate a second I/O device object for a second device [p. 9, lines 21 – 23];

(3) Although Coburn appears to instantiate control assemblies, the control assemblies are directed to virtual mechanical mechanisms not real physical I/O devices that are connected to a network [p. 10, lines 2 – 6];

(4) Coburn does not disclose the configuring, modifying or cloning of actual industrial site I/O devices [p. 10, lines 14 – 17]; and

(5) Patent Office has not made a legally sufficient showing of a motivation to combine and modify based on an explicit analysis [p. 11, lines 17 – 22].

As to argument (1), examiner respectfully disagrees and submits that a configuration file contains configuration properties for a specific device (i.e. device information, device settings, commands, events, variable definition, variable get, variable put and initialization; col. 6, line 50 – col. 7, line 30 of Myer). Myer teaches loading the most updated configuration file for a particular device to generate interface object instances (col. 6, lines 29 – 49). The configuration file contains device properties for a device and Myer teaches create an object instance for another device by reading or loading configuration files (col. 5, lines 45 – 67). For example, configuration file describing the characteristics of device number manufactured by company XYZ causes an XYZ device interface object to be instantiated (col. 5, lines 46 – 67). When the object instance is created based on the configuration file, the device properties for the devices is copied from the configuration file to the device interface object. If device object_A is based on configuration file_A, then creating new device object_B based on configuration file_A would indirectly copy the properties of device object_A to device object_B, which is used for a second I/O device (col. 5, lines 25 – 45). Therefore, Myer teaches cloning properties that include the one of attributes, parameters, and operations of the first I/O device in order to configure a second I/O device.

As to argument (2), Myers discloses that a configuration file 168 describing the characteristics of device number 260 manufactured by company XYZ causes an XYZ device 260 interface object to be instantiated from generic device interface object (col. 5, lines 45 – 67). Modifying the generic device interface object based on the

configuration file for device number 260 creates an interface object for the device. If device object_A is based on configuration file 168, then creating new device object_B based on configuration file 168 would indirectly copy the properties of device object_A to device object_B, which is used configured a second I/O device (col. 5, lines 25 – 45).

As to argument (3), examiner disagrees and notes that the control assemblies of Coburn correspond to recited device objects and the control assemblies control mechanical resources (I/O devices) of the control system [p., paragraph 1281].

As to argument (4), examiner disagrees and submits that the control assemblies of Coburn control mechanical resources (I/O devices). The I/O devices in Coburn are configured and modified when the properties of the control assemblies are set and changed (p. 43, paragraph 0581 and p. 89, paragraph 1287). It is noted that Myer teaches clones properties that include the one of attributes, parameters, and operations of the first I/O device in order to configure a second I/O device (col. 6, lines 29 – 49). Therefore, the combination of Myer and Coburn teaches applicant's invention as claimed.

In response to argument (5), the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. In this case, the motivation can be found at p. 63, paragraph 0800 of Coburn. One of ordinary skill in the art would have been motivated to make the combination because the ability to modify attributes of a device object allows for

reusable logic templates comprising the basic components of a sequential control program that would be employed to produce sequential control logic with consistent behavior and form [p. 63, paragraph 0800 of Coburn]. This also minimizes programming time required to program machine sequential control.

As to the arguments with regards to new claims 22 and 30, see the rejections to claims 22 and 30 below.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 2, 4 – 10, 18, 20 – 23 and 27 – 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,615,088 to Myer et al. [hereinafter Myer] in view of U.S. Patent Application Publication No. 2002/0120921 to Coburn et al. [hereinafter Coburn], both references previously cited.

5. As to claim 1, Myer teaches the invention substantially including input/output (I/O) devices [a plurality of devices, appliances and/or equipment; col. 2, lines 52 – 67] connected to a network of an industrial control system [control area networks 30 and 31; col. 2, lines 52 - 67], comprising:

a first network [control area network 30; col. 3, lines 1 - 22];

a plurality of I/O devices connected to the first network [a plurality of devices, appliances and/or equipment; col. 2, lines 52 – 67]; and

a master computer [Master controller 36; col. 3, lines 1 – 21] coupled to the first network [Master controller 36 may also poll each device in control area network 30 periodically to monitor its status; col. 3, lines 1 - 22] and including control software [a specific interface object instance operable to communicate and operate with the at least one device; col. 1, lines 53 – 62] with an object oriented model [col. 5, lines 27 – 45] for defining one of attributes [characteristics of device number 260; col. 5, lines 46 – 67], parameters and operations of the I/O devices [interface object instance operable to communicate and operate with the at least one device; col. 1, lines 53 – 62] wherein the master computer adjusts the one of attributes, parameters, and operations in order to configure a first I/O device that is connected to the fist network [Installation software 100 defines a generic device interface object 102, which may be configured by device interface object configuration files 104 to instantiate objects 106-110 tailored to specific devices made by specific manufacturers; col. 5, lines 26 – 45] by creating a first I/O device object [instantiate objects 106-110; col. 5, lines 25 – 45], the master computer subsequently clones properties that include the one of attributes, parameters, and operations of the first I/O device in order to configure a second I/O device [If the configuration for the new device does exist, then the configuration file is compared with the configuration file information obtained from the new device....specific device interface object can be instantiated, as shown in block 138. Alternatively, the interface object instances may be generated when the configuration file is loaded in block 128 or

upon startup when all configuration files 104 are loaded into installation software 100 prior to bringing the new device on-line; col. 6, lines 29 – 49] that is subsequently connected to the first network [process by which the devices may be installed is sufficiently flexible to allow either the insertion of the hardware device first or the configuring of the device interface object first and then attach them to one another; col. 9, lines 19 – 32], by creating a second I/O device object that is a copy of the first I/O device object [Configuration file 168 describing the characteristics of device number 260 manufactured by company XYZ causes an XYZ device 260 interface object to be instantiated from generic device interface object 102; col. 5, lines 45 - 67]. Although Myer teaches the invention substantially, Meyer does not specifically disclose accepts user input to modify at least one of the attributes of the second I/O device object that are different for the second I/O device and the master computer sends the first and second device objects to the first and second I/O devices on the network respectively.

However, Coburn teaches a controller area network [plurality of networked components; p. 22, paragraph 0339] with I/O devices [control devices, control assemblies and control sequencing; p. 11, paragraph 0193] and controller software [A Control Assembly Component is a deployable control subsystem that exposes an interface (to Control System-wide tools) that is a composition of the following parts using a common object (or data) model and is easily configurable by setting properties; p. 90, paragraph 1310], creating a second I/O device object that is a copy of the first I/O device object [When a CA is instantiated, the specific CA instance is given a unique name which is then used thereafter to reference the specific CA instance and to identify

control system parameters corresponding to the instance; p. 14, paragraph 0241], and accepts user input to modify at least one of the attributes of the second I/O device object that are different for the second I/O device [Control Assembly Type is a reusable component containing a number of user selectable properties (or parameters). 1stclamps is a specific instance of the component for which the user will set the properties; p. 43, paragraph 0581 and p. 89, paragraph 1287], and the master computer sends the first and second device objects to the first and second I/O devices on the network respectively [ladder logic is downloaded to the PLC 472 for controlling the enterprise; p. 52, paragraph 0690].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the features of user input to modify at least one of the attributes of the second I/O device object that are different for the second I/O device and the master computer sends the first and second device objects to the first and second I/O devices on the network respectively as taught by Coburn to the invention of Myer. One of ordinary skill in the art would have been motivated to make the combination because the ability to modify attributes of a device object allows for reusable logic templates comprising the basic components of a sequential control program that would be employed to produce sequential control logic with consistent behavior and form [p. 63, paragraph 0800 of Coburn]. This also minimizes programming time required to program machine sequential control.

6. As to claim 10, Myer as modified teaches a system for cloning input/output (I/O) devices [a plurality of devices, appliances and/or equipment; col. 2, lines 52 – 67 of Meyer] connected to a network of an industrial control system [control area networks 30 and 31; col. 2, lines 52 – 67 of Meyer], comprising:

a first network [control area network 30; col. 3, lines 1 - 22 of Meyer];

a second network [control area network 31; col. 2, lines 53 - 67 of Meyer] coupled to the first network;

a first plurality of I/O devices connected to the first network [a plurality of devices, appliances and/or equipment; col. 2, lines 52 – 67 of Meyer];

a second plurality of I/O devices connected to the second network [col. 3, lines 21 – 38 of Meyer]; and

a master computer [Master controller 36; col. 3, lines 1 – 21 of Meyer] coupled to one of the first and second networks [Master controller 36 may also poll each device in control area network 30 periodically to monitor its status; col. 3, lines 1 - 22 of Meyer] and including control software [a specific interface object instance operable to communicate and operate with the at least one device; col. 1, lines 53 – 62 of Meyer] with an object oriented model [col. 5, lines 27 – 45 of Meyer] for defining one of attributes [characteristics of device number 260; col. 5, lines 46 – 67 of Meyer] and operations of at least one of the I/O devices on one of the first and second networks [interface object instance operable to communicate and operate with the at least one device; col. 1, lines 53 – 62 of Meyer], wherein the master computer adjusts the one of attributes, parameters and operations in order to configure a first I/O device that is

connected to one of the first and second networks [Installation software 100 defines a generic device interface object 102, which may be configured by device interface object configuration files 104 to instantiate objects 106-110 tailored to specific devices made by specific manufacturers; col. 5, lines 26 – 45 of Meyer] by creating a first I/O device object [instantiate objects 106-110; col. 5, lines 26 – 46 of Myer], master computer subsequently clones properties that include the one of attributes, parameters, and operations of the first I/O device in order to configure a second I/O device [If the configuration for the new device does exist, then the configuration file is compared with the configuration file information obtained from the new device....specific device interface object can be instantiated, as shown in block 138. Alternatively, the interface object instances may be generated when the configuration file is loaded in block 128 or upon startup when all configuration files 104 are loaded into installation software 100 prior to bringing the new device on-line; col. 6, lines 29 – 49 of Meyer] that is subsequently connected to the other of the first and second networks [process by which the devices may be installed is sufficiently flexible to allow either the insertion of the hardware device first or the configuring of the device interface object first and then attach them to one another; col. 9, lines 19 – 32 of Meyer], by creating a second I/O device object that is a copy of the first I/O device object [When a CA is instantiated, the specific CA instance is given a unique name which is then used thereafter to reference the specific CA instance and to identify control system parameters corresponding to the instance; p. 14, paragraph 0241 of Coburn], and accepts user input to modify at least one of the attributes of the second I/O device object that are different for the second I/O

device [Control Assembly Type is a reusable component containing a number of user selectable properties (or parameters). 1stclamps is a specific instance of the component for which the user will set the properties; p. 43, paragraph 0581 and p. 89, paragraph 1287 of Coburn], and the master computer sends the first and second device objects to the first and second I/O devices on the network respectively [ladder logic is downloaded to the PLC 472 for controlling the enterprise; p. 52, paragraph 0690]. As to the motivation for incorporating the features of Coburn to the invention of Myer, see the rejection to claim 1 above.

7. As to claim 2, Myer as modified teaches the object oriented model [col. 5, lines 27 – 45 of Myer and p. 47, paragraph 0621 of Coburn] includes a hierarchical class structure [p. 11, paragraph 0193 of Coburn] with inheritance properties [p. 47, paragraph 0628 of Coburn].

8. As to claim 4, Myer as modified teaches hierarchical class structure [p. 26, paragraph 0381 of Coburn] includes a device class that includes a plurality of device types [p. 13, paragraph 0234 and p. 14, paragraph 0236 of Coburn].

9. As to claim 5, Myer as modified teaches the object oriented model includes at least one class level hierarchically below the device class [p. 11, paragraph 0193 of Coburn].

10. As to claim 6, Myer as modified teaches devices instantiated at the at least one class level inherit the one of the attributes, parameters and operations [p. 14, paragraph

0241 of Coburn] of the at least one class level and a device type of the device class from which the at least one class level depends [p. 11, paragraph 0192 of Coburn].

11. As to claim 7, Myer as modified teaches the device types include at least one of analog and digital devices [p. 50, paragraph 0675 of Coburn].

12. As to claim 8, Myer teaches the control software includes a graphical user interface for interfacing the control software and cloning the I/O devices [control area network user interfaces (CAN UI/F) 35; col. 2, lines 52 - 67].

13. As to claim 9, Myer as modified teaches the I/O devices include at least one of barcode readers, sensors, actuators [p. 57, paragraph 0717 of Coburn], and motor starters [p. 61, paragraph 0765 of Coburn].

14. As to claim 18, Myer as modified teaches the first and second networks are connected by a gateway [col. 4, lines 9 – 28 of Myer and p. 88, paragraph 1273 of Coburn].

15. As to claim 21, Myer as modified teaches the second I/O device object is created after at least one of the attributes, parameters, and operations of the first I/O device object is adjusted [Control Assembly Type is a reusable component containing a number of user selectable properties (or parameters). 1stclamps is a specific instance of the component for which the user will set the properties; p. 43, paragraph 0581 and p. 89, paragraph 1287 of Coburn].

16. As to claim 22, Myer teaches the master computer is coupled to the first network via a second network [Master controller 36 may then send commands to other devices in the system; col. 8, lines 15 – 23; col. 4, lines 27 – 50; col. 2, lines 52 – 67].

17. As to claim 23, Myer teaches at least a portion of the first network is internal to an industrial site [Control area networks 30 and 31 are local area networks; col. 2, lines 52 – 67] and at least a portion of the second network is external to and remote from the industrial site [Using control network portal 12, users may access control area networks 30 and 31 via web browsers 23 and 24; col. 4, lines 23 – 50].

18. As to claim 27, Myer as modified teaches the master computer at least one of clones the first I/O device object [col. 6, lines 29 – 49 of Myer] or modifies the second I/O device object [p. 43, paragraph 0581 and p. 89, paragraph 1287 of Coburn] externally and remotely from an industrial site that has the first I/O device [col. 4, lines 23 – 50 of Myer].

19. As to claim 28, Myer as modified teaches the first I/O device is connected to the first network [col. 2, lines 52 – 67 of Myer], and wherein the master computer at least one of clones the first I/O device object [col. 6, lines 29 – 49 of Myer] or sends the modified second I/O device object [p. 43, paragraph 0581 and p. 89, paragraph 1287 of Coburn] via the second network to the first network [col. 4, lines 23 – 50 of Myer].

20. As to claim 29, Myer as modified teaches the master computer creates the first I/O device object and sends the first I/O device object to the first network via the second network [ladder logic is downloaded to the PLC 472 for controlling the enterprise; p. 52, paragraph 0690 of Coburn].

21. As to claim 30, Myer teaches the master computer is selectively coupled to one of the first and second networks [col. 2, lines 52 – 67 of Myer], and wherein the master computer includes control software for defining one or more attributes [col. 5, lines 46 – 67] and operations of at least one of the I/O devices [col. 1, lines 53 – 62] on selectively one of the first and second networks [col. 2, lines 52 – 67 and col. 4, lines 23 – 50].

22. As to claim 31, Myer as modified teaches a first master computer [master controllers; col. 2, lines 51 – 67 of Myer] coupled to the first network and including software to configure one of the I/O devices [col. 5, lines 26 – 45 of Meyer]; and a second master computer coupled to the second network and including software to configure one of the I/O devices [p. 43, paragraph 0581 and p. 89, paragraph 1287 of Coburn].

23. As to claim 32, Myer as modified teaches a first master computer [master controllers; col. 2, lines 51 – 67 of Myer] coupled to the first network and cloning the first I/O device object to create a second I/O device object [col. 6, lines 29 – 49 of Myer]; and a second master computer coupled to the second network and modifying the second I/O device object [p. 43, paragraph 0581 and p. 89, paragraph 1287 of Coburn].

24. Claims 24 – 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Myer and Coburn further in view of U.S. Patent No. U.S. Patent 6,788,980 to Johnson.

25. As to claim 24, Myer and Coburn do not teach the master computer disconnects from the first network before modifying the second I/O device object.

However, Johnson teaches configurator software permitting devices to configure the control system [col. 7, line 60 – col. 8, line 10] and master computer disconnects from the first network before modifying the second I/O device object [configurator works both off-line in a bulk creation mode and on-line in an individual correction mode; col. 14, lines 8 – 18].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to further modify the combination of Myer and Coburn to include the features of the master computer disconnects from the first network before modifying the second I/O device object. One of ordinary skill in the art would have been motivated to make the combination because this allows devices outside the control system to be configured [col. 13, lines 10 – 29 of Johnson] and allows the device to be configured without the application development environment [col. 13, lines 10 – 29 of Johnson].

26. As to claim 25, Myer as modified teaches the master computer connects to and sends the modified second I/O device object to the first network to configure the second I/O device [p. 52, paragraph 0690 of Coburn].

27. As to claim 26, Myer as modified teaches the master computer selectively disconnects from either the first or the second network before modifying the second I/O device object [col. 14, lines 8 – 18 of Johnson].

Conclusion

28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

CONTACT INFORMATION

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li B. Zhen whose telephone number is (571) 272-3768. The examiner can normally be reached on Mon - Fri, 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Thomson can be reached on 571-272-3718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Li B. Zhen
Examiner
Art Unit 2194

LBZ